

Work Order ID 66344
Thursday, February 10, 2011 1:36:44 PM



Page 1

Item ID: D206-667-103

Accept



Setup Start



Revision ID:

Stop



Item Name: Crosstube Fwd

Start Date: 2/11/2011 Start Qty: 1.00



Cust Item ID:

Required Date: 2/25/2011 Req'd Qty: 1.00



Customer:



Reference:

Run Start



Stop



Approvals: Process Plan: *mc*

Date: 1-02-10 Tooling:

Date:

QC:

Date: SPC (Y/N):

Date:

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

Draw Nbr

Revision Nbr

D206-667-143

Rev C

100

0.00



DOCUMENT CONTROL

100

Memo

0.00

Document Control

Photocopy bluefile and create labels as per PPP D206-667-103 CHG004

8403/30

HJ for BG 11-3-30

110

0.00



Pick Kit

Packaging

Packaging

Memo

0.00

Packaging

DP

11-3-17

120

0.00



BENDING MACHINE - CROSSTUBES

CNC Bend 2

Memo

0.00

CNC Alpha 160 Bender

Bend tube as per Dwg D206-667-143 using CNC bender program

DP

11-3-17

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 66344

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Thursday, February 10, 2011 1:36:45 PM

Item ID: D206-667-103

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Cust Item ID:

Required Date: 2/25/2011 Req'd Qty: 1.00



Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start



QC:

Date:

SPC (Y/N):

Date:

Stop

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

130

QC15- Crosstube Dimensional Check

0.00



QC

Memo

0.00

Subtotal



Quality Control

W/O:		WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector	

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Run Start



Stop

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

140

0.00



Crosstubes

Crosstubes

Memo

0.00

1-Drill holes & ream using drill Jig DT8541 & DT8542 as per Dwg D206-667-143. Drill all (3) top holes.

3-Flip tube and switch drilling Jigs from right to left, left to right. Locate Jigs off existing holes using "T" pins.

4-Drill pilot holes using drill Jig DT8541 & DT8542 as per Dwg D206-667-143. Drill only the top (2) holes.

5-Drill pilot holes as per Dwg D206-667-143. Drill only the top (2) holes.

6-Drill Fwd rivet holes using drill Jig DT8787FWD as per Dwg D206-667-143. Note: Fwd side has 3x top holes.

7-Drill Aft rivet holes using drill Jig DT8787AFT as per Dwg D206-667-141.

8-C'sink holes as per Dwg D206-667-143. Allow rivet to sit below surface to compensate for paint.

9-Scribe part # and batch # using vibrating stylus as per Dwg D206-667-143 Inside of Cuff(Donot engrave on outside of tube)

10-Deburr & Inspect for surface damage. Repair damage within limits as per Dwg D206-667-143

SAD

11-03-22

AD
SAD

11-3-21

PTO

①

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: D206-667-103 PAR #: N/A Fault Category: x-tubes NCR: Yes No DQA: 18 Date: 11-04-21
 Resolution: use as-is Disposition: use as-is QA: N/C Closed: OK Date: 11/04/25

NCR: 66344		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			
11/03/22	#140	employee Drilled extra hole on cold. Drives the 2nd hole in wrong size) RL Lack of Attention when	CP 11.03.22 PS/042	-Acceptable	N/A	S 11/04/22	CP 11.03.22 PS/042	S 11/03/22
		Positioning the tube.	CP 11.03.22 PS/042	Update and attach PSI for extra hole	L 11/04/22	S 11/04/22	L 11.04.07 PS/042	S 11/03/22

NOTE: Date & initial all entries

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Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Stop



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

150

Crosstubes Chemical Conversion

0.00



HandFXtube

Memo

0.00

SAD 11-03-22

(L)

Hand Finishing Crosstubes

160

QC3- Inspect Part Finish

0.00



QC

Memo

0.00

Sublet

Quality Control

170

QC5- Inspect part completeness to step on W/O

0.00



QC

Memo

0.00

Sublet

(H)

Quality Control

W/O:		WORK ORDER CHANGES					
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Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop



Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
180 Outsource2 Outsource process - NDT	Outsource process - NDT per QSI038 4.1 Memo CROSSTUBES	0.00 0.00		P10:13768				CL 11/03/28	①
190 Packaging Packaging	Packaging Memo Ensure copy of NDT results attached to work order.	0.00 0.00							11/03/28
200 QC Quality Control	QC5- Inspect part completeness to step on W/O Memo	0.00 0.00							11-03-28

W/O:		WORK ORDER CHANGES					
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Customer:

Reference:

Run Start



Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Stop



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

210

0.00



SprayPaint

SprayPaint

Memo

0.00

Spray Painting

1-Prime inside and outside crosstube as per QSI 005 4.2

2-Paint outside crosstube with White Imron as per QSI 005 4.2

PRIME:

Start Time: 10:00

Finish Time: 11:00

PAINT:

Start Time: 3:00

Finish Time: 4:00

ET 11-03-28 (X)

220

QC14- Inspect Spray Paint

0.00



QC

Memo

0.00

Quality Control

Wrap in plastic bag to protect from scratches

8 11/03/29

(X)

W/O:		WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector	

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Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Stop



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

230

0.00



Crosstubes

Crosstubes

Memo

0.00

(ASSEMBLE AS PER DWG D206-667-143)

1-Install support using 0.03" to 0.06" thick layer of magnobond 6398 per QSI 015. Let cure for 12h after installation and prior to packaging. Note: (2) Aft holes should be facing up.

A/R Magnobond 6398: 116677

2-Install supports and clamps as per Dwg D206-667-143. Torque clamps to 80-100 in lb

3-Install nut plates as per Dwg D206-667-143. Touch-up rivet heads with Imron paint.

25 11-03-29

240

QC5- Inspect part completeness to step on W/O

0.00



QC

Memo

0.00

Quality Control

MA 11 03 30 (1)

W/O:		WORK ORDER CHANGES					
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Reference:

Run Start



Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

250

Pick Kit

0.00



Packaging

Memo

0.00

Packaging

11/3/30 SP

260

QC4- 100% Inspect kits for completeness

0.00



QC

Memo

0.00

Quality Control

8 w/ 03/30

FD

270

Packaging

0.00



Packaging

Memo

0.00

Packaging

Identify and pack for shipping as per PPP D206-667-103

Location: S3

PPP Rev: D

11/3/30 SP

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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Customer:

Reference:

Run Start



Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Stop



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

280

QC21- Final Inspection - Work Order Release

0.00



11/4/11



QC

Memo

0.00

Quality Control

POSITIVE RECALL

EFFECTIVE 11.13.11 AUTH UP

RELEASED DATE 11.04.07

NEEDS DSI. ~~DATA~~
ADDED TO PAPERWORK
DSI 9346 REV. L ADDED. 11.04.07.

MF
11-03-30

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

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NOTE: Date & initial all entries

Picklist Print

Thursday, February 10, 2011 1:36:39 PM

Page 1

Work Order ID: 66344

Parent Item: D206-667-103

Parent Item Name: Crosstube Fwd



Start Date: 2/11/2011

Required Date: 2/25/2011

Start Qty: 1.00

Required Qty: 1.00

Comments: IPP Rev:F 05.09.01 Add holes for compatibility with Bell Skid tubes KJ/JLM
 IPP Rev:G 08-06-03 update as per DSI9415 (ECN1198) DD verified by:
 IPP Rev:H 08.11.17 QC5 was QC6 at step 12 KJ verified by: EC
 IPP Rev:I 08-12-15 add magnobond DD verified by: EC
 IPP Rev:J 09.01.06 ECN 08-562 EC verified by: DD
 IPP Rev:K 09-01-19 as per DSI9439 DD verified by: EC

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
AN5-30A 		Purchased	No			250	Each	80.0000	4	4		11/3/30	
BOLT													

Location	Loc Qty	Loc Code
ST339	80	
114941	30	
116003	50	

AN5-32A 		Purchased	No			250	Each	149.0000	4	4		11/3/30	
Bolt													

Location	Loc Qty	Loc Code
ST340	149	
115016	38	
115108	50	
115589	60	
115698	1	

AN5-7A 		Purchased	No			250	Each	208.0000	10	10		11/3/30	
Bolt													

Location	Loc Qty	Loc Code
ST337	208	
113149	100	
115936	8	
116516	100	

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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NOTE: Date & initial all entries

Picklist Print

Thursday, February 10, 2011 1:36:39 PM

Work Order ID: 66344

Parent Item: D206-667-103

Parent Item Name: Crosstube Fwd

Start Date: 2/11/2011

Required Date: 2/25/2011

Start Qty: 1.00

Required Qty: 1.00

AN960JD516 NAS1149D0563J Purchased

No

250

Each

34.0000

18

18



Washer



M116702 S

Location

Loc Qty

Loc Code

ST

34

103694

18

107534

12

109287

4

AN970-4

Purchased

No

250

Each

67.0000

12

12



Washer



M116900 113608

Location

Loc Qty

Loc Code

ST344

67

115936

67

D206-667-103TRN

Manufactured

No

110

Each

2.0000

1

1



Crosstube Turning DetailL



Location

Loc Qty

Loc Code

LG

2

64948

1

64949

1

D2873-043

Manufactured

No

230

Each

24.0000

2

2



Nut Plate Assembly



RT 11-03-29

Location

Loc Qty

Loc Code

LG

22

63497

2

65375

20

ST

2

60981

2

Thursday, February 10, 2011 1:36:40 PM

Shop Packet Print

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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Parent Item Name: Crosstube Fwd

Start Date: 2/11/2011



Required Date: 2/25/2011

Start Qty: 1.00



Required Qty: 1.00

D2873-045 Manufactured No 230 Each 24.0000 2 2
 *65992 x1*  *85 11-03-29*
 Nut Plate Assembly

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
LG	24	
60982	4	
63498	1	
<u>65132</u>	19	<i>x1</i>

D2891-1 Manufactured No 230 Each 39.0000 2 2
  *85 11-03-29*
 2.25 Support

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
LG	39	
50952	9	<i>x2</i>
<u>53773</u>	20	
62595	10	

D3595-063-395 Manufactured No 230 Each 115.0000 4 4
  *85 11-03-29*
 RUBBER CUSHION

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
FP	10	
44667	10	
ST	105	
<u>63368</u>	45	<i>x4</i>
65361	60	

RUBBER CUSHION .63" x 3.95" (4)

W/O:		WORK ORDER CHANGES					
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Parent Item Name: Crosstube Fwd

Start Date: 2/11/2011

Required Date: 2/25/2011

Start Qty: 1.00

Required Qty: 1.00

MS20601-AD4W8

Purchased

No

230

Each

204.0000

14

14



RIVET



ET 11-03-29

Location

Loc Qty

Loc Code

LG

100

116119

100

X 14

ST322

104

112203

104

MS21042L5

Purchased

No

250

Each

1,108.0000

4

4



Nut



113608

Location

Loc Qty

Loc Code

ST139

26

114813

26

ST300

1082

115594

386

116105

496

116548

200

Y

MS21920-20

Purchased

No

230

Each

61.0000

4

4



Clamp (per MIL-DTL-8783C)



ET 11-03-29

Location

Loc Qty

Loc Code

LG

61

112624

2

114687

1

115736

8

116799

50

X 9

W/O:		WORK ORDER CHANGES					
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Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

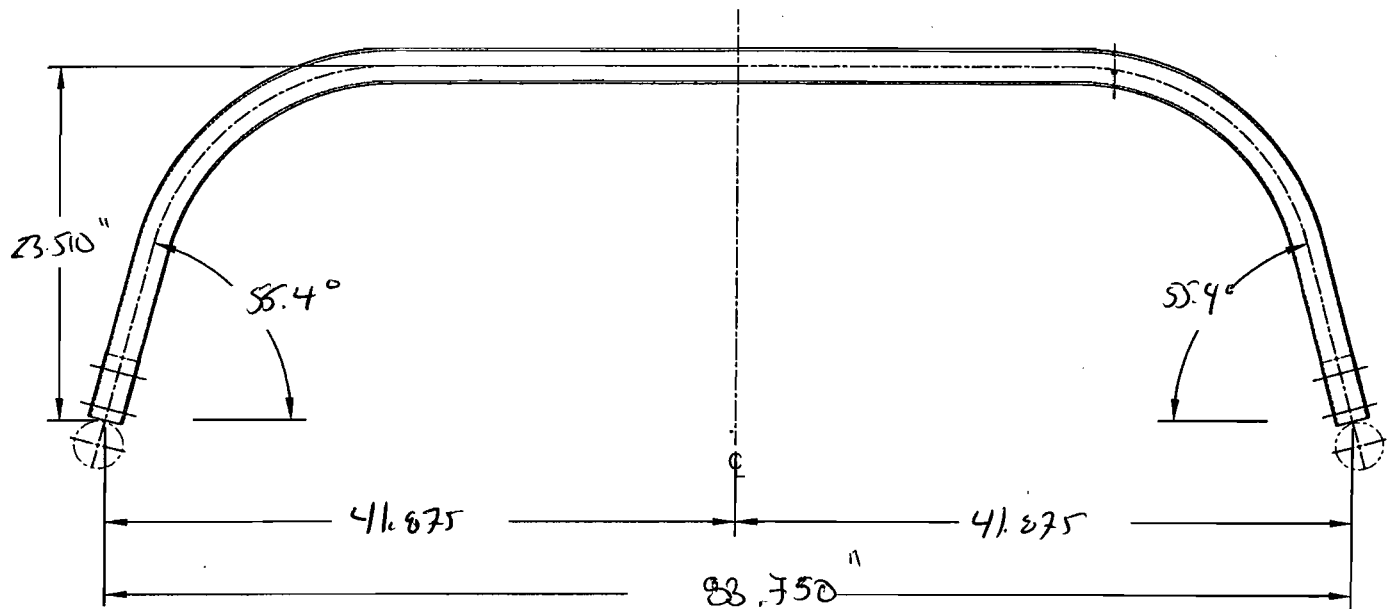
Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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NOTE: Date & initial all entries

DART AEROSPACE LTD	Work Order: 66344
Description: Crosstube High Fwd (206L)	Part Number: D206-667-103
Inspection Dwg: D206-667-143 Rev: C	Page 1 of 1

Required Dimension	Min	Max
Height	23.39	23.65
1/2 Span	41.79	42.05
Angle	54	56
Total Span	83.58	84.10



Comments

QC15 Inspection	8
Date	11/02/18

Rev	Date	Change	Revised by	Approved
A	07.02.06	New Issue	KJ/JM	
B	09.06.26	Dimensions updated per Dwg Rev C	KJ	
C	09.10.22	Minimum height dimension revised	KJ	

W/O:		WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector	

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Item	Qty -143	Part Number	Description
1	X	D206-667-143	CROSSTUBE ASSEMBLY (206L HIGH FWD)
2	1	D6002-115	CROSSTUBE
3	2	D2873-043	NUT PLATE
4	2	D2873-045	NUT PLATE
5	2	D2891-1	SUPPORT
6	4	D3595-063-395	RUBBER CUSHION
7	4	MS21920-20	CLAMP (OR MS21920-21)
8	14	MS20601AD4W8	RIVET (OR NAS9302B-4-8)
9	A/R	MAGNOBOND 6398	ROCKWELL SPECIFICATION RBO-120-023 ADHESIVE (TEXTRON/BELL SPEC. 299-947-100, TYPE II, CLASS 2 ADHESIVE)

GENERAL NOTES:

- 1) MATERIAL: MANUFACTURED FROM D6002-115
FINISHED LENGTH = 104.98±0.020
- 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
PRIME INSIDE AND OUTSIDE PER DART QSI 005 4.2
PAINT OUTSIDE PER DART QSI 005 4.2
- 3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED.
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED.
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX.
- 6) IDENTIFICATION: SCRIBE DART PART NUMBER "D206-667-143" AND BATCH NUMBER ON INSIDE OF CUFF USING VIBRATING STYLUS.
- 7) WEIGHT: 15.5 lbs
- 8) PART IS SYMMETRIC ABOUT CENTERLINE.
- 9) RUN CUTTER OFF PART WHERE INDICATED. BLEND OUT EDGE LONGITUDINALLY. TRANSITION SHOULD BE SMOOTH.
- 10) BEND PROGRESSIVELY WITH A MINIMUM OF 10 PASSES. MAXIMUM TUBE FLATTENING DUE TO BENDING IS 6% BASED ON O.D.
- 11) LIQUID PENETRANT INSPECT OUTSIDE SURFACE OF CROSSTUBE PER QSI 038.
- 12) INSTALL D2891-1 SUPPORT USING 0.03" TO 0.06" THICK LAYER OF MAGNOBOND 6398 PER QSI 015. LET CURE FOR 12 HOURS AFTER INSTALLATION AND PRIOR TO PACKAGING.
- 13) INSTALL MS21920-20 CLAMPS (OR -21) WITH D3595-063-395 RUBBER CUSHIONS TO SECURE THE D2891-1 SUPPORT ON TOP SIDE OF THE CROSSTUBE. ENSURE CLAMP MECHANISMS ARE LOCATED ON CROSSTUBE SUPPORTS.
- 14) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS SCRATCHES, NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE.
- 15) TORQUE CLAMPS 80 TO 100 IN-LB. ENSURE AT LEAST 1.5 THREADS ARE SHOWING IN SAFETY AND THAT NUT HAS NOT BOTTOMED-OUT AFTER TORQUING.

RELEASED
08/11/06

C	REVISE GENERAL NOTES/PART LIST (ZN D7-1); REORGANIZED VIEWS AND REFORMATTED DRAWING TO CURRENT STANDARDS. D3595-063-395 WAS D2856-400-694 (ZN D6-2 & A5-2); REMOVED REF. & ADD TOLERANCE (ZN D3-3, C4-3, C5-3); RELOCATED FLAG #6 (ZN A8-3) PER NCR 210; MOVED TURNING DETAIL & UPDATED TOLERANCE TO SHEET 4.	RF	08.11.06
B	ADD HOLES AND NUT PLATES FOR COMPATABILITY WITH BHT/AA SKUDTUBES	PH	05.07.26
A	NEW ISSUE	CP	00.11.17
REV.	DESCRIPTION	BY	DATE
DESIGN	RF	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	RF	DRAWING NO.	REV. C
CHECKED	RF	D206-667-143	SHEET 1 OF 4
MFG. APPR.	RF	TITLE	SCALE
APPROVED	RF	CROSSTUBE ASSY (206L HIGH FWD)	NTS
DE APPR.	RF	COPYRIGHT © 2000 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COMMERCE OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	
DATE	08.11.06		

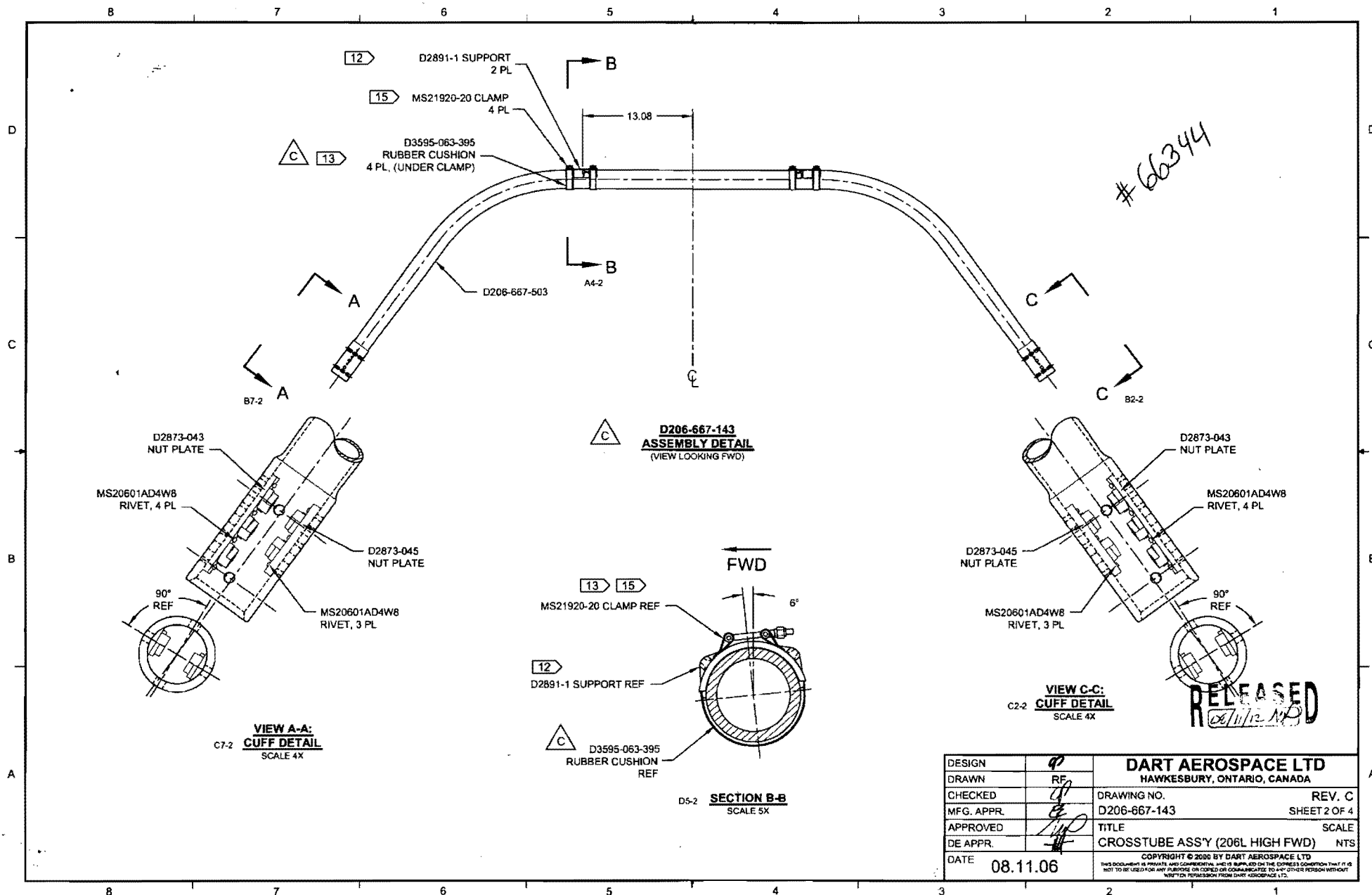
W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries



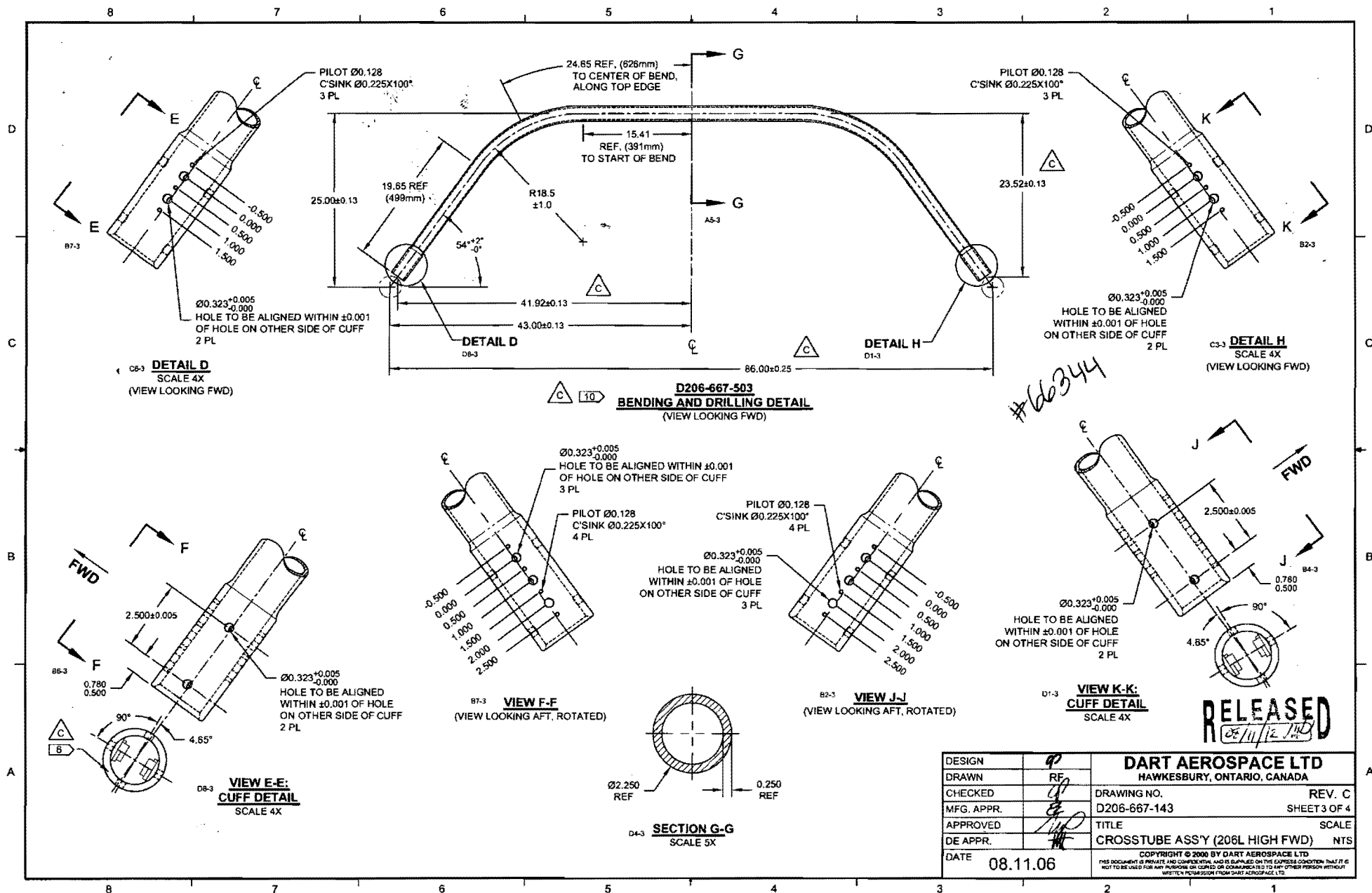
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DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries



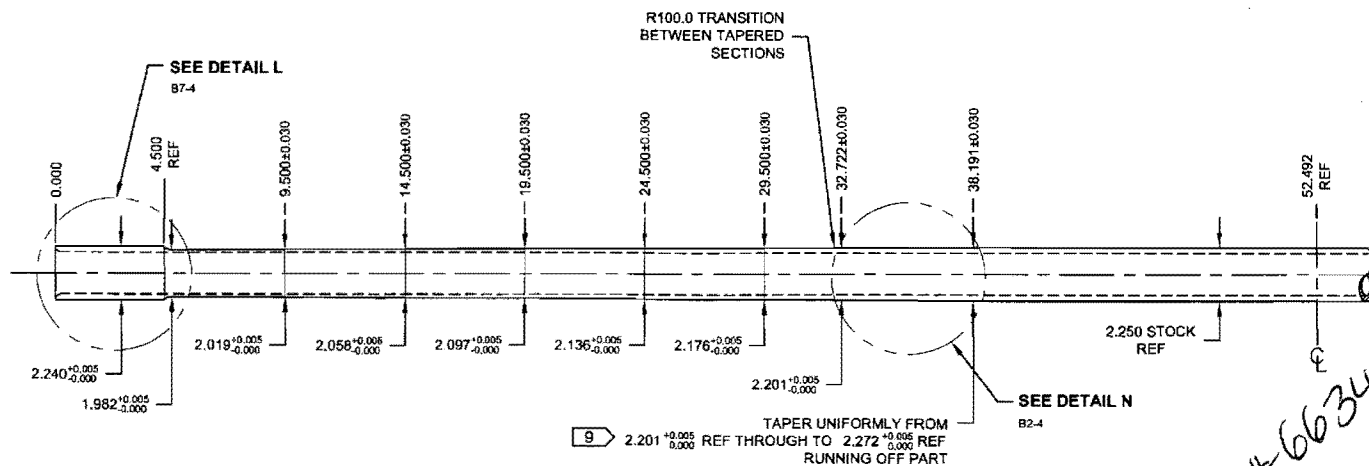
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DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

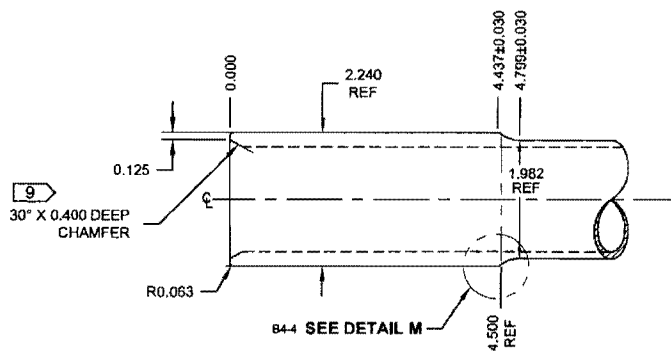
Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

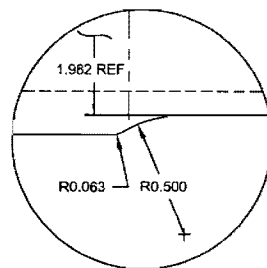
NOTE: Date & initial all entries



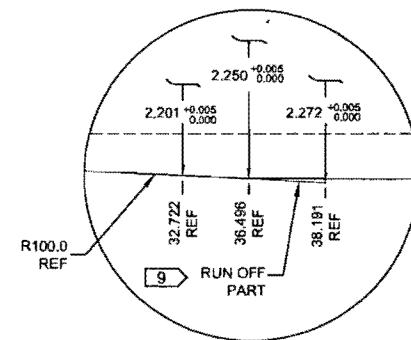
C TURNING DETAIL



DETAIL L:
D7-4 **CROSSTUBE CUFF**
NOT TO SCALE



DETAIL M:
A6-4 **CUFF TRANSITION**
NOT TO SCALE



DETAIL N:
C4-4 **TAPER RUN-OFF**
NOT TO SCALE

RELEASED

DESIGN	90	DART AEROSPACE LTD	
DRAWN	RF	HAWKESBURY, ONTARIO, CANADA	
CHECKED	RF	DRAWING NO.	REV. C
MFG. APPR.	RF	D206-667-143	SHEET 4 OF 4
APPROVED	RF	TITLE	SCALE
DE APPR.	RF	CROSSTUBE ASS'Y (206L HIGH FWD)	NTS
DATE	08.11.06	COPYRIGHT © 2000 BY DART AEROSPACE LTD	
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W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

DART SERVICE INSTRUCTION

TO AMEND INSTALLATION INSTRUCTIONS: IIN-D206-667 REV. C
 REF. CANADIAN STC: SH01-5
 REF. FAA STC: SR01304NY

THE FOLLOWING D206-667-101/-103/-203 AND D407-667-105 CROSSTUBES HAVE EXTRA HOLES DRILLED ON THE AFT SIDE OF THE CUFFS. THIS HOLE IS NOT REQUIRED FOR INSTALLATION OF DART CROSSTUBES ONTO BHT/AAI SKIDTUBES AS SHOWN IN FIGURE 1.

CUSTOMERS RECEIVING CROSSTUBES AT CHG 002 PRIOR TO 06.08.08 SHOULD CONTACT DART FOR DISPOSITION IF INSTALLING THE DART CROSSTUBES ONTO BHT/AAI SKIDTUBES PER IIN-D206-667 REV. C.

CUSTOMERS RECEIVING CROSSTUBES AT CHG 002 PRIOR TO 06.08.08 TO BE INSTALLED WITH DART SKIDTUBES MAY FIND THAT THE SUPPORTS HAVE BEEN INSTALLED BACKWARDS. THE SUPPORTS SHOULD BE REMOVED AND RE-INSTALLED PER ICA-D206-667.

PART NUMBER	CHANGE NUMBER	BATCH NUMBER
D206-667-101	002	B24244, B28679, B29261
D206-667-103	002	B26702, B26704, B27980, B25606, B25605, B23220, B23219, B23218, B23217, B28682, B28683, B32644, B34139, B36053, B66344
D206-667-203	002	B27492, B27491, B27981, B25609, B25608, B25006, B24646, B34144, B36059
D206-667-203	003	B39852, B51939, B51940, B66405
D407-667-105	002	B31553
D407-667-105	003	B39271, B56799






L	ADD B/N B66344	MB	11.03.31
K	ADD B/N B66405	CP	11.03.08
J	ADD B/N B56799	CP	10.04.09
I	ADD B51939, B51940	CP	09.10.08
H	ADD B39271, B39852	PH	08.06.16
G	ADD B36053, B36059	PH	08.01.17
F	ADD B34139, B34144	MB	07.10.22
E	ADD D407-667-105 & B31553	MB	07.08.14
D	ADD B32664	MB	07.07.24
C	ADD B29261	MB	06.11.20
B	ADD B28679, B28682, B28683	PH	06.10.10
A	NEW ISSUE	PH	06.08.08
REV.	DESCRIPTION	BY	DATE

CANADA
 DEPARTMENT OF TRANSPORT
 AIRCRAFT CERTIFICATION
 BRANCH
 DAO # 01-O-01

APPROVED

BY: 
 D. SHEPHERD (DE # 02)

DATE: 11.03.31
 CERT. NO.: SH01-5
 ISSUE NO.: 3

DESIGN		DART AEROSPACE LTD	
DRAWN		HAWKESBURY, ONTARIO, CANADA	
CHECKED		DRAWING NO.	REV. L
MFG. APPR.		DSI 9346	SHEET 1 OF 2
APPROVED		TITLE	SCALE
DE APPR.		DEVIATION ON D206-667 & D407-667 NTS	
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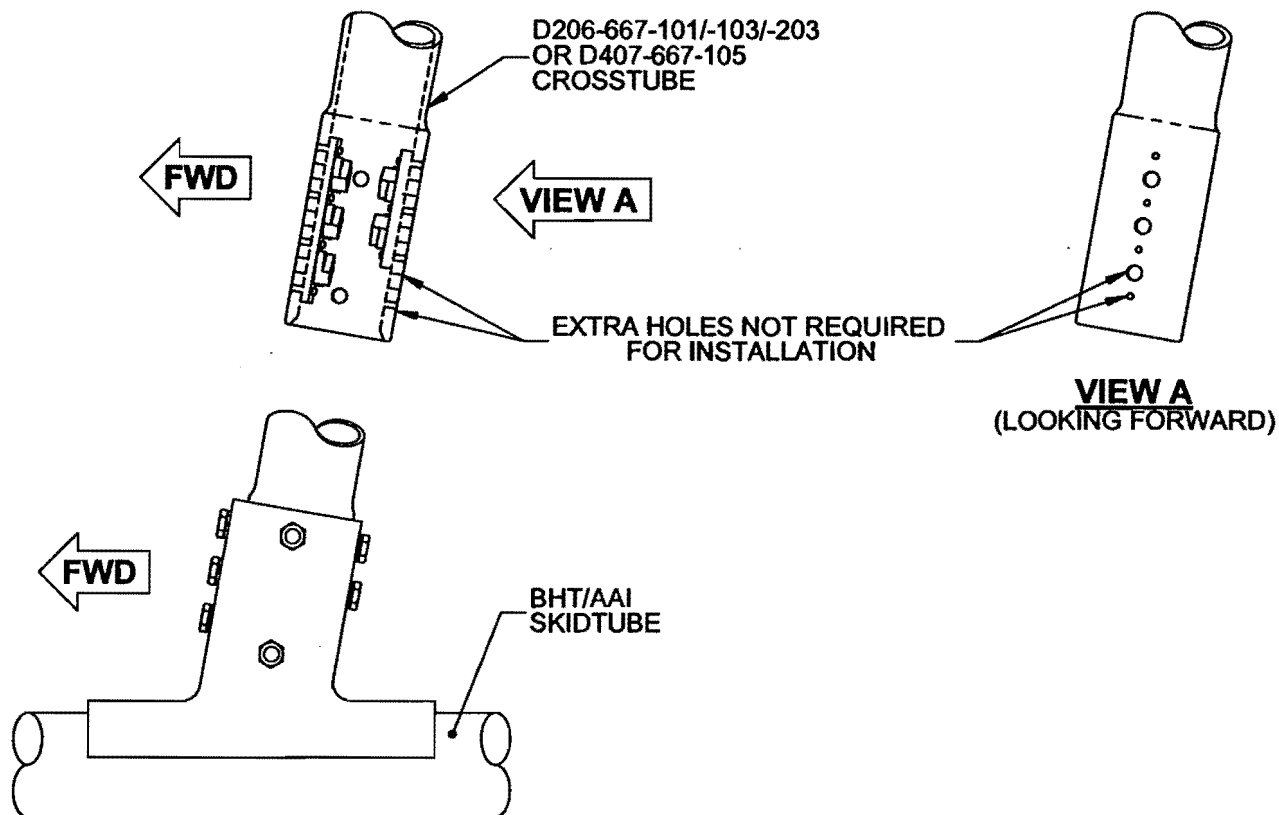


FIGURE 1 - INSTALLATION OF DART CROSSTUBES ON BHT/AAI SKIDTUBE

CANADA
DEPARTMENT OF TRANSPORT
AIRCRAFT CERTIFICATION
BRANCH
DAO # 01-O-01

APPROVED

BY: *[Signature]*
D. SHEPHERD (DE # 02)

DATE: 11.03.31
CERT. NO.: SH01-5
ISSUE NO.: 3

DESIGN	<i>PH</i>	DART AEROSPACE LTD	
DRAWN	<i>SC</i>	HAWKESBURY, ONTARIO, CANADA	
CHECKED	<i>N/A</i>	DRAWING NO.	REV. L
MFG. APPR.	<i>[Signature]</i>	DSI 9346	SHEET 2 OF 2
APPROVED	<i>[Signature]</i>	TITLE	SCALE
DE APPR.	<i>[Signature]</i>	DEVIATION ON D206-667 & D407-667	NTS
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LIQUID PENETRANT TEST REPORT

P- 15204

CLIENT DAT Aerospace DATE March 25-2011 PAGE 1 OF 1
ATTENTION LINDA LACELLE ACUREN JOB NO. 188-11-02063 TIME AM ☒ PM ☐
ADDRESS 1220 ABERDEEN ST. POWO No. 13708
Hawkesbury, ON WORK LOCATION Hawkesbury
KGA IKT ACCEPTANCE STD. ASTM 1417/PSI-038 REV./DATE 2005
PROJECT F.P.I. on cross TUBES TEST
ITEM(S) EXAMINED (4)

JOB DESCRIPTION PROCEDURE No. LT-002 REV./DATE 2008 TECHNIQUE No. LT-002 REV./DATE 2008
PART NO. MATERIAL ALUMINUM THICKNESS VARIOUS
SCOPE WET FLUORESCENT LIQUID PENETRANT INSPECTION
CARRIED OUT 100% EXTERNAL

TEST DETAILS

METHOD <input checked="" type="checkbox"/> FLUORESCENT <input type="checkbox"/> VISIBLE	<input checked="" type="checkbox"/> WATER WASH <input type="checkbox"/> SOLVENT REMOVABLE <input type="checkbox"/> POST EMULSIFIED
FAMILY BRAND <u>MAGNA FLUX</u>	BLACK LIGHT S/N <u>6459</u> <input checked="" type="checkbox"/> OUTPUT > 1000 μ W/cm ² <input type="checkbox"/> AMBIENT < 2 fc
PENETRANT <u>2607</u> MINIMUM DWELL TIME <u>45</u> MIN.	LIGHTING EQUIP. <input type="checkbox"/> FLASHLIGHT <input type="checkbox"/> TROUBLELIGHT <input type="checkbox"/> OUTPUT > 100 fc @ SURFACE
PENETRANT REMOVER <u>K2C</u> MINIMUM DRY TIME <u>>10</u> MIN.	OTHER <u>LABING</u>
DEVELOPER <u>SKD 52</u> MINIMUM DWELL TIME <u>10</u> MIN.	LIGHT METER S/N <u>1098866</u> CAL DUE DATE <u>oct-19</u>
DEVELOPER TYPE <input checked="" type="checkbox"/> NON AQUEOUS <input type="checkbox"/> AQUEOUS <input type="checkbox"/> DRY	<u>2011</u>

TEST SURFACE

SURFACE CONDITION <input type="checkbox"/> AS GROUND <input type="checkbox"/> AS WELDED <input type="checkbox"/> MACHINED <input type="checkbox"/> SHOT BLASTED <input checked="" type="checkbox"/> CLEAN BARE METAL
SURFACE TEMPERATURE <input type="checkbox"/> < -4°C/20°F <input type="checkbox"/> -4°C/20°F TO 10°C/50°F <input type="checkbox"/> 10°C/50°F TO 52°C/125°F <input type="checkbox"/> > 52°C/125°F

RESULTS- ☐ METRIC ☐ IMPERIAL

1 - CrossTUBE: W.O. 66343 accept ✓
1 - CrossTUBE: W.O. 66344 reject ✓
1 - CrossTUBE: W.O. 67422 ✓
1 - CrossTUBE: W.O. 67398 ✓

RT 11-0328

Scope of Services

The agreement of Acuren Group Inc. to perform services extends only to those services provided for in writing. Under no circumstances shall such services extend beyond the performance of the requested services. It is expressly understood that all descriptions, comments and expressions of opinion reflect the opinions or observations of Acuren Group Inc. based on information and assumptions supplied by the owner/operator and are not intended nor can they be construed as representations or warranties. Acuren Group Inc. is not assuming any responsibilities of the owner/operator and the owner/operator retains complete responsibility for the engineering, manufacture, repair and use decisions as a result of the data or other information provided by Acuren Group Inc. In no event shall Acuren Group Inc.'s liability in respect of the services referred to herein exceed the amount paid for such services.

Standard of Care

In performing the services provided, Acuren Group Inc. uses the degree, care and skill ordinarily exercised under similar circumstances by others performing such services in the same or similar locality. No other warranty, expressed or implied, is made or intended by Acuren Group Inc.

SIGNATURES

CLIENT REPRESENTATIVE <u>Jan T. Healy</u> PRINT	<u>[Signature]</u> SIGNATURE	DTR # <u>E-63779</u>
TECHNICIAN (SIGNATURE): <u>[Signature]</u>		REPORT REVIEWED BY:
NAME (PRINT): <u>Mike Schuster</u>		NAME INITIALS
1 st TECHNICIAN CGSB LEVEL <u>I</u> SNT LEVEL <u>_____</u> CGSB REG. NO. <u>6666</u>	2 nd TECHNICIAN CGSB LEVEL <u>_____</u> SNT LEVEL <u>_____</u> CGSB REG. NO. <u>_____</u>	

